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(71) Applicant and

(72) Inventor: PADAN, Nir [IL/IL]; Moshav Sade Yitzhak,  
38840 Moshav Sade Yitzhak (IL).

(74) Agents: AGMON, Jonathan et al.; Soroker-Agmon, Ad-  
vocates and Patent Attorneys, Nolton House, 14 Shenkar  
Street, 46725 Herzliya Pituach (IL).

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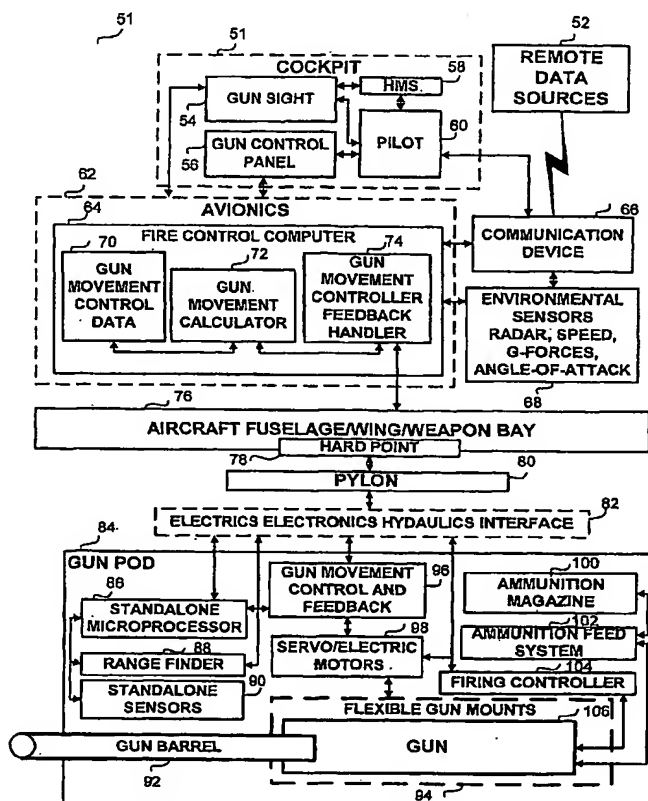
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[Continued on next page]

(54) Title: GUN POD WITH ELEVATION AND AZIMUTH CONTROL



(57) Abstract: A gun pod (106), mounted on a fixed-wing aerial vehicle, stores, delivers, controls and supports a controllable movement gun unit (108). The gun pod (106) includes a flexible gun mount, gun movement actuators, gun movement controllers (96), a standalone range finder (880), a standalone processor (86), and standalone sensors (90) for capturing dynamically environmental data and for controlling the movement of the gun unit (108). The gun is provided with allowable range of movement in the elevation and the azimuth where the ranges are determined in accordance with the flight envelope of the aerial vehicle, the characteristics of the gun unit (108) and the mounting location of gun pod (106). The movement of the gun is either controlled manually or automatically.



— *before the expiration of the time limit for amending the claims and to be republished in the event of receipt of amendments*

*For two-letter codes and other abbreviations, refer to the "Guidance Notes on Codes and Abbreviations" appearing at the beginning of each regular issue of the PCT Gazette.*

**(88) Date of publication of the international search report:**  
17 March 2005

# INTERNATIONAL SEARCH REPORT

International application No.

PCT/IL03/00395

## A. CLASSIFICATION OF SUBJECT MATTER

IPC(7) : F41 A 27/02

US CL : 89/37.16, 41.15, 41.18

According to International Patent Classification (IPC) or to both national classification and IPC

## B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)

U.S. : 89/37.16, 37.17, 37.18, 37.19, 37.21, 37.22, 41.02, 41.15, 41.18

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practicable, search terms used)

## C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	US 2,501,662 A (CLEGG) 28 March 1950 (28.03.1950), see Figs. 1-2 and associated written description	1-2, 8-11, 16, 18-20, 25-28
X	US 2,530,571 A (EASTMAN) 21 November 1950 (21.11.1950) see figs. 1, 3 and associated written description.	1-12, 14-16, 18-20, 25-30
Y	US 5,432,546 A (CARGILL) 11 July 1995 (11.07.1995) see col. 2, lines 54-58	17
Y	US 6,202,534 B1 (BAXTER ET AL.) 20 March 2001 (20.03.2001) see col. 1, lines 17-23	23
Y	US 5,155,292 A (ROSTEIL ET AL.) 13 October 1992 (13.10.1992) see col. 5, lines 15-26	24



Further documents are listed in the continuation of Box C.



See patent family annex.

\* Special categories of cited documents:

"A" document defining the general state of the art which is not considered to be of particular relevance

"B" earlier application or patent published on or after the international filing date

"I" document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)

"O" document referring to an oral disclosure, use, exhibition or other means

"P" document published prior to the international filing date but later than the priority date claimed

"T"

later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention

"X"

document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone

"Y"

document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art

"&"

document member of the same patent family

Date of the actual completion of the international search

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Mail Stop PCT, Attn: ISA/US  
Commissioner for Patents  
P.O. Box 1450  
Alexandria, Virginia 22313-1450

Facsimile No. (703) 305-3230

Authorized officer

Stephen M. Johnson

Telephone No. (703) 306-4158

# INTERNATIONAL SEARCH REPORT

International application No.

PCT/IL03/00395

## Box I Observations where certain claims were found unsearchable (Continuation of Item 1 of first sheet)

This international report has not been established in respect of certain claims under Article 17(2)(a) for the following reasons:

1. ☐ Claim Nos.:  
because they relate to subject matter not required to be searched by this Authority, namely:
2. ☐ Claim Nos.:  
because they relate to parts of the international application that do not comply with the prescribed requirements to such an extent that no meaningful international search can be carried out, specifically:
3. ☐ Claim Nos.:  
because they are dependent claims and are not drafted in accordance with the second and third sentences of Rule 6.4(a).

## Box II Observations where unity of invention is lacking (Continuation of Item 2 of first sheet)

This International Searching Authority found multiple inventions in this international application, as follows:  
Please See Continuation Sheet

1. ☐ As all required additional search fees were timely paid by the applicant, this international search report covers all searchable claims.
2. ☐ As all searchable claims could be searched without effort justifying an additional fee, this Authority did not invite payment of any additional fee.
3. ☐ As only some of the required additional search fees were timely paid by the applicant, this international search report covers only those claims for which fees were paid, specifically claims Nos.:
4. ☒ No required additional search fees were timely paid by the applicant. Consequently, this international search report is restricted to the invention first mentioned in the claims; it is covered by claims Nos.: 1-30

Remark on Protest

☐  
☐

The additional search fees were accompanied by the applicant's protest.

No protest accompanied the payment of additional search fees.

## INTERNATIONAL SEARCH REPORT

PCT/IL03/00395

### Continuation of Item 4 of the first sheet:

The title does not comply with PCT Rule 4.3 because it exceeds 7 words in length. The new title is "Gun Pod with Elevation and Azimuth Control".

### BOX II. OBSERVATIONS WHERE UNITY OF INVENTION IS LACKING

Group I is directed to claims 1-30, drawn to an apparatus for dynamically controlling the elevation and azimuth of an aerial gun incorporated within a gun pod, in class 89, subclass 37.17.

Group II is directed to claims 31-35, drawn to a method of modifying an existing gun pod, in class 89, subclass 37.19.

Group III is directed to claims 36-41, drawn to an apparatus for dynamically controlling the elevation and azimuth of at least one aerial gun unit, in class 89, subclass 41.21.

Claim 31 of group II contains special technical feature not found in group I directed to modifying the strength, diameter, and volume of the at least one gun pod.

Claim 36 of group III contains a special technical feature not found in claim 1 of group I directed to sensing and receiving remote data and sensing environment data and transmitting said data to a fire control computer to control the elevation and azimuth movement of the aerial gun unit.